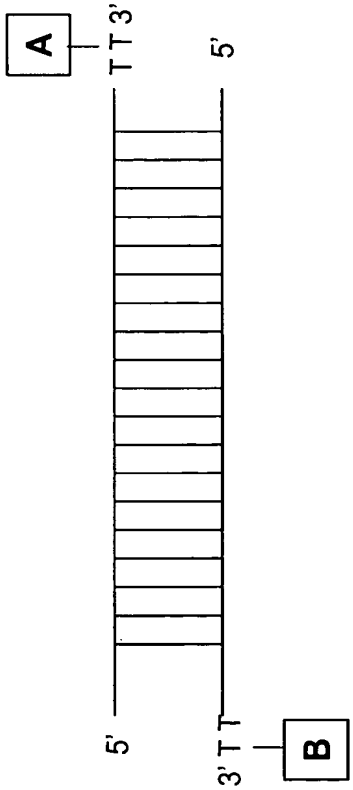


Fig. 1A

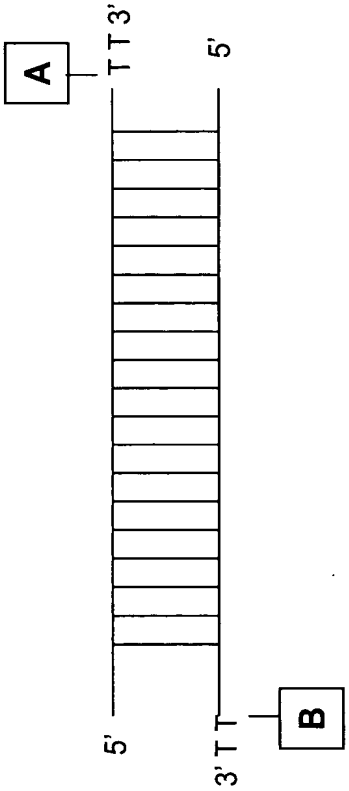


Fig. 1B

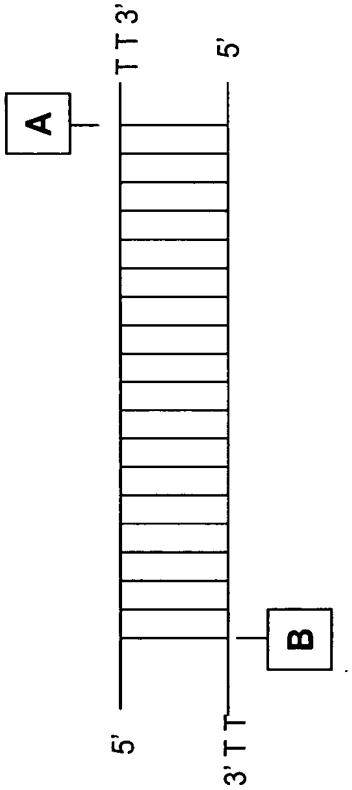


Fig. 1C

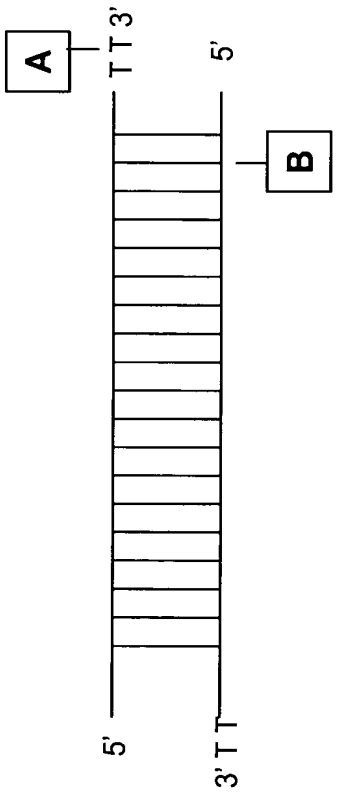


Fig. 1D

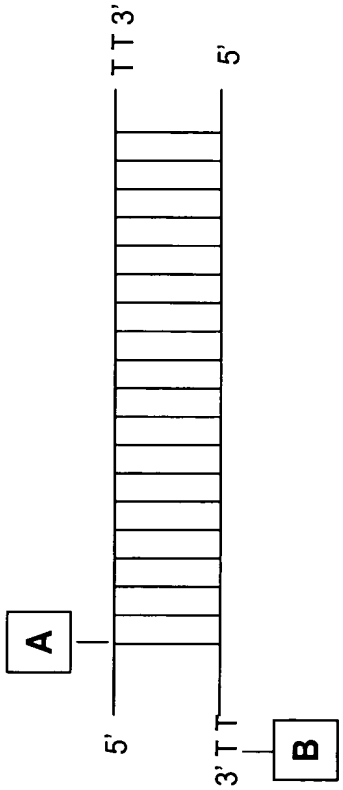


Fig. 1E

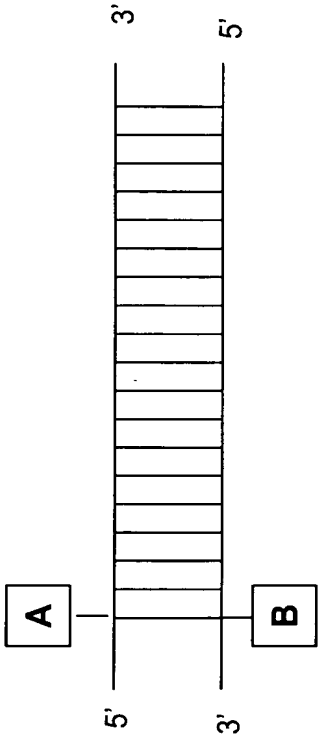


Fig. 1F

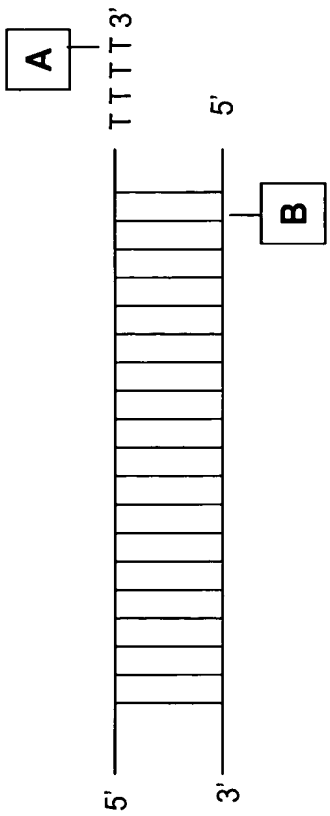


Fig. 1G

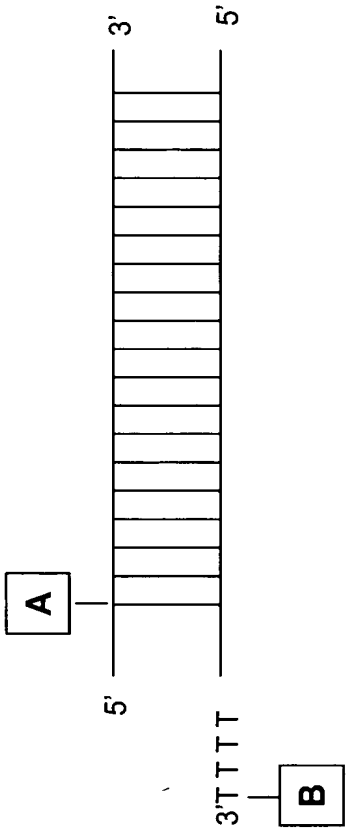


Fig. 1H

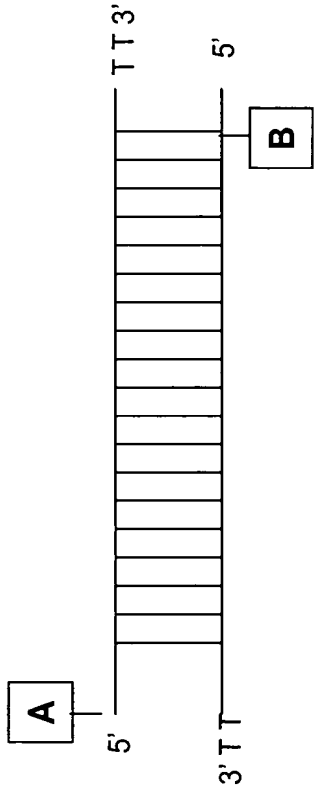


Fig. 1I

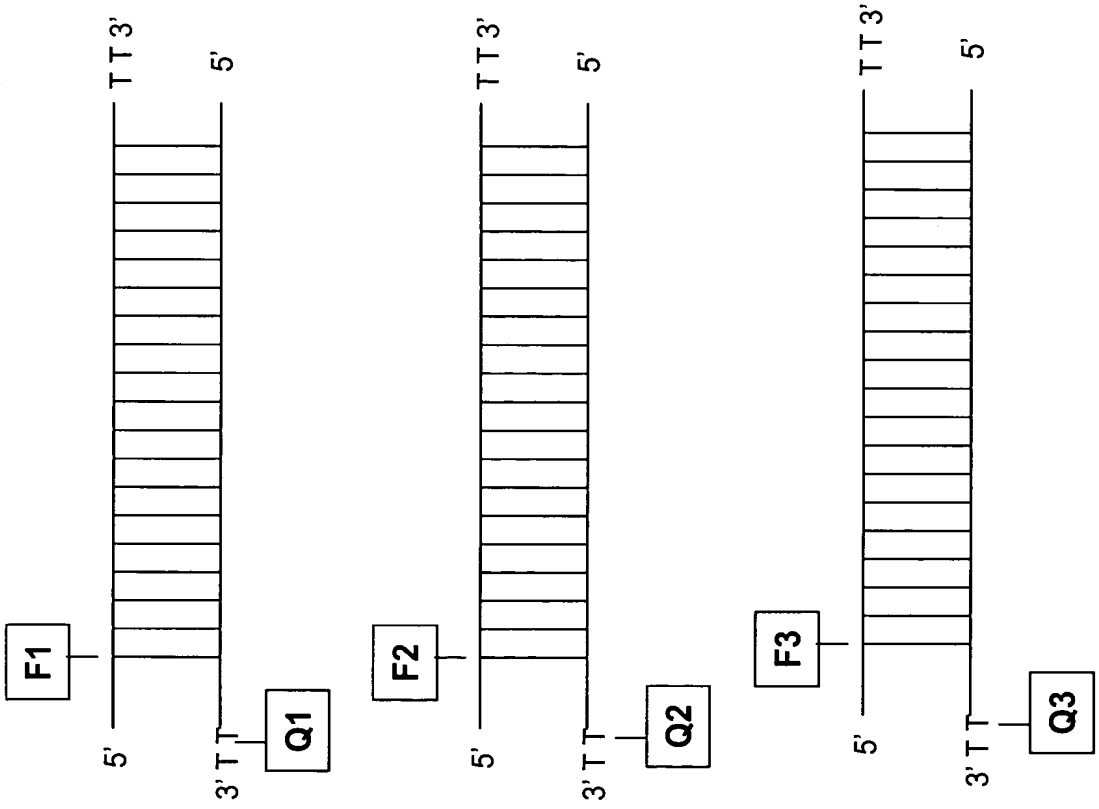


Fig. 2

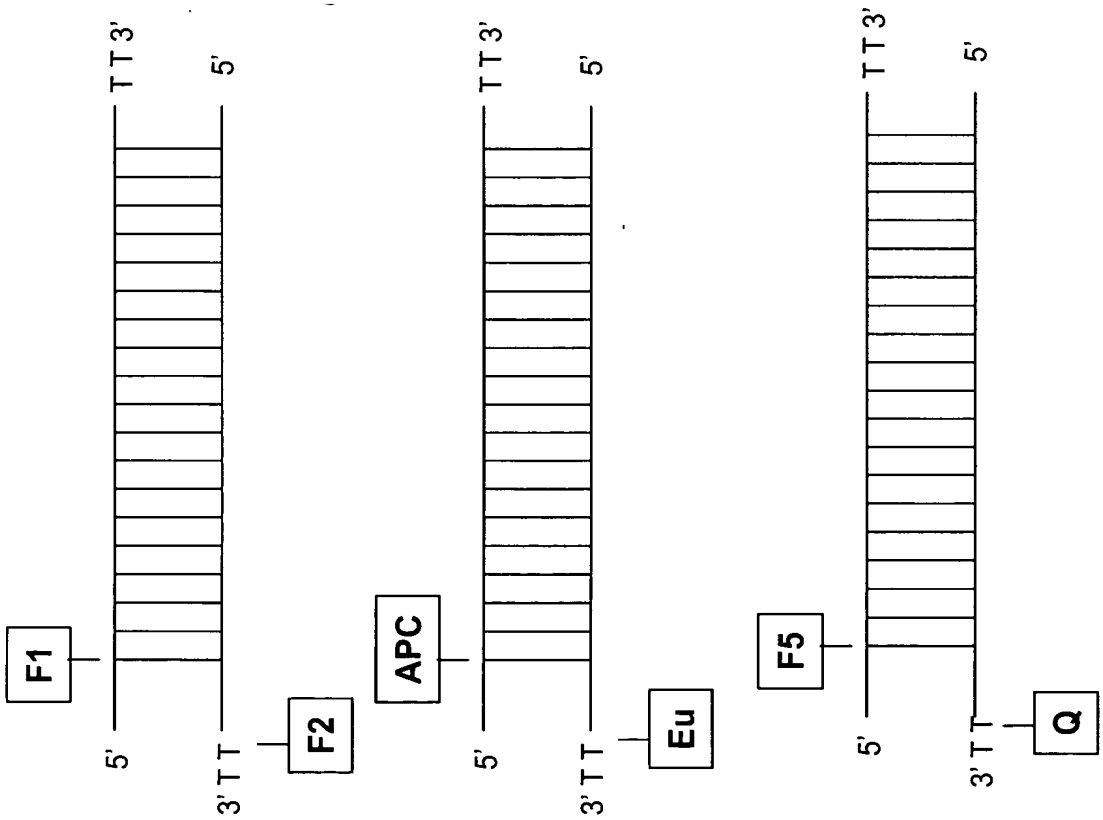


Fig. 3

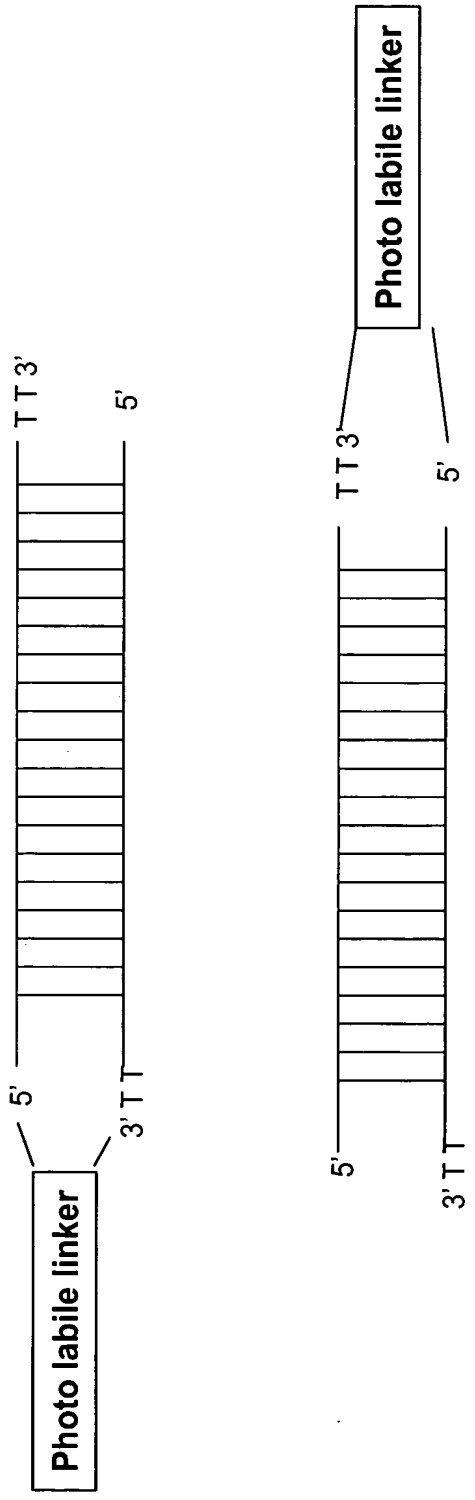


Photo labile linker
T T 3'
5'
5'
3' T T
Photo labile linker
T T 3'
5'
5'
3' T T

Fig. 4

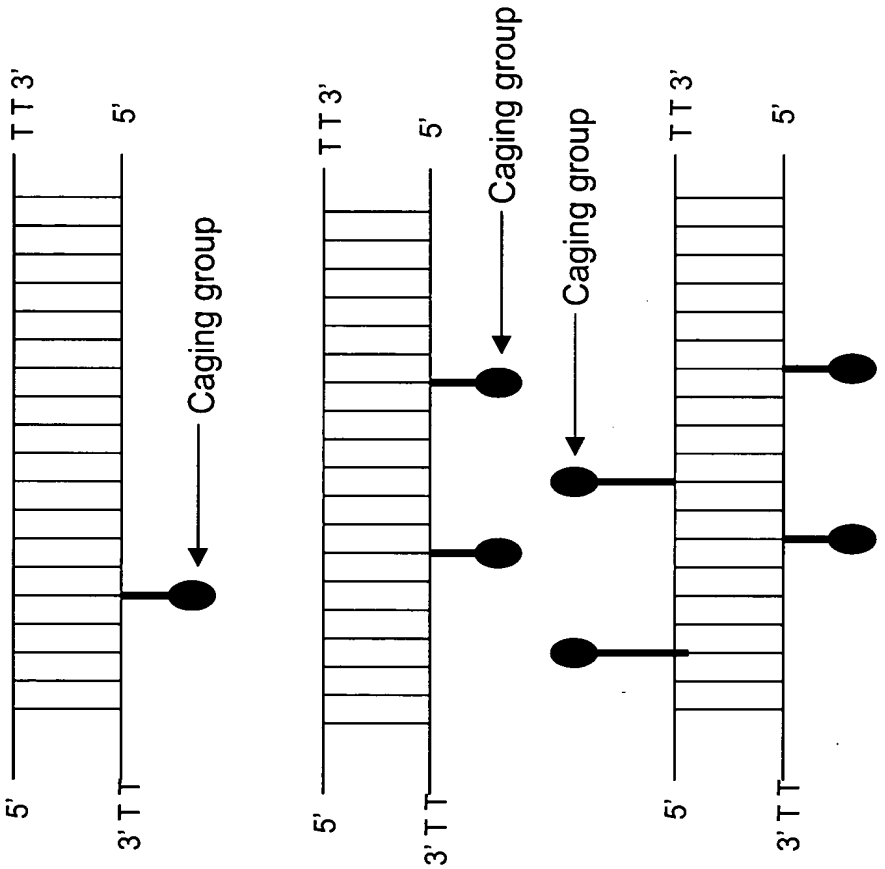

T T 3'
5'
Caging group
5'
3' T T
T T 3'
5'
Caging group
5'
3' T T
Caging group
T T 3'
5'
5'
3' T T

Fig. 5

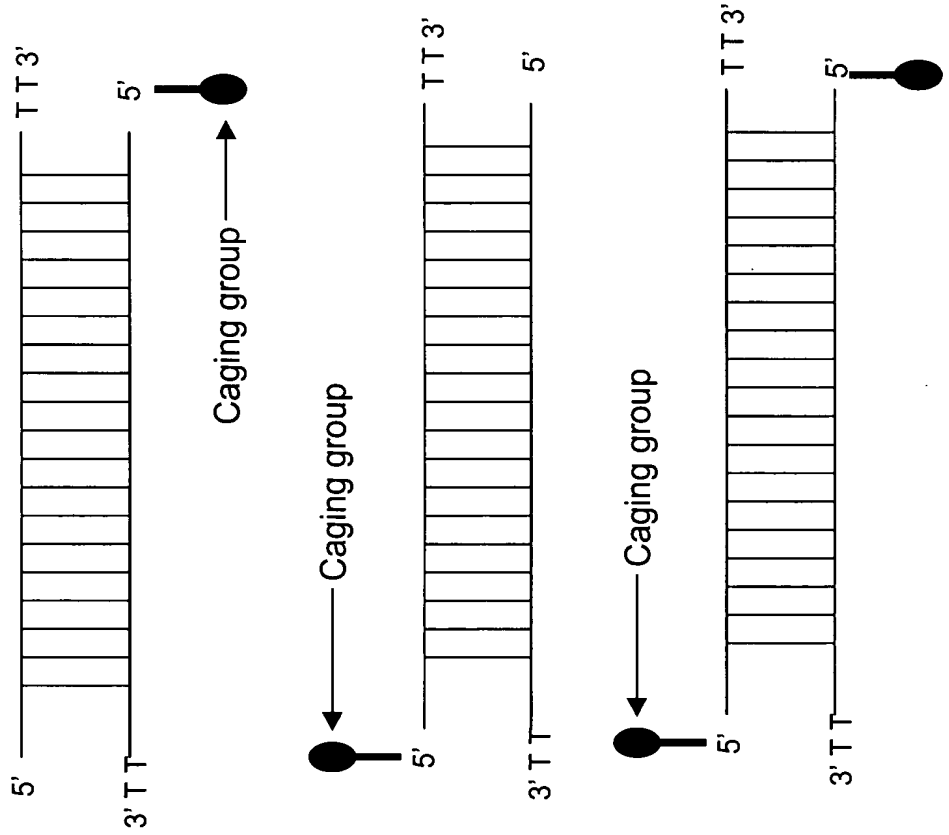

T T 3'
5'
Caging group
5'
3' T T
T T 3'
5'
Caging group
5'
3' T T
T T 3'
5'
Caging group
5'
3' T T

Fig. 6

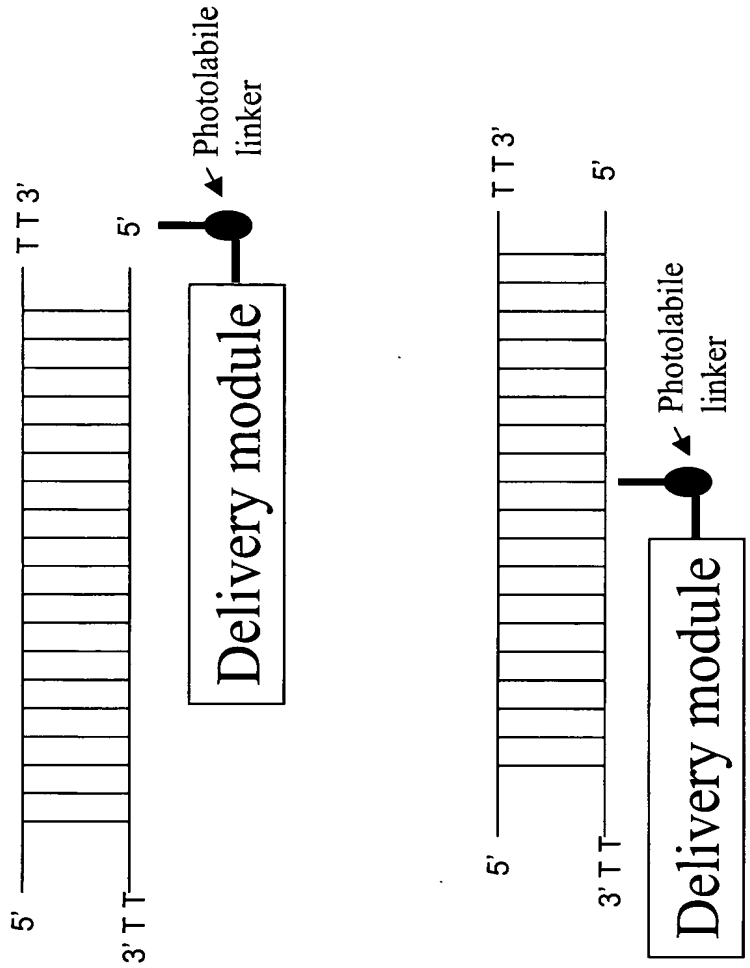

Photolabile linker
Delivery module
T T 3'
5'
5'
3' T T
T T 3'
5'
Photolabile linker
Delivery module
5'
3' T T

Fig. 7

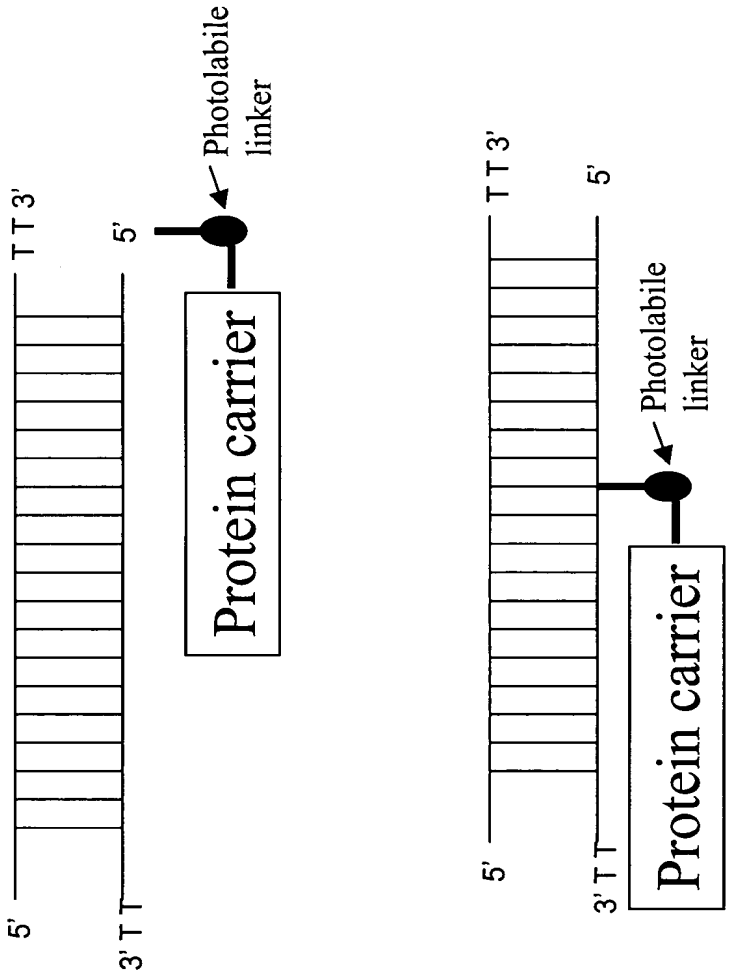

Photolabile linker
T T 3'
5'
Protein carrier
5'
3' T T
T T 3'
5'
Photolabile linker
Protein carrier
5'
3' T T

Fig. 8

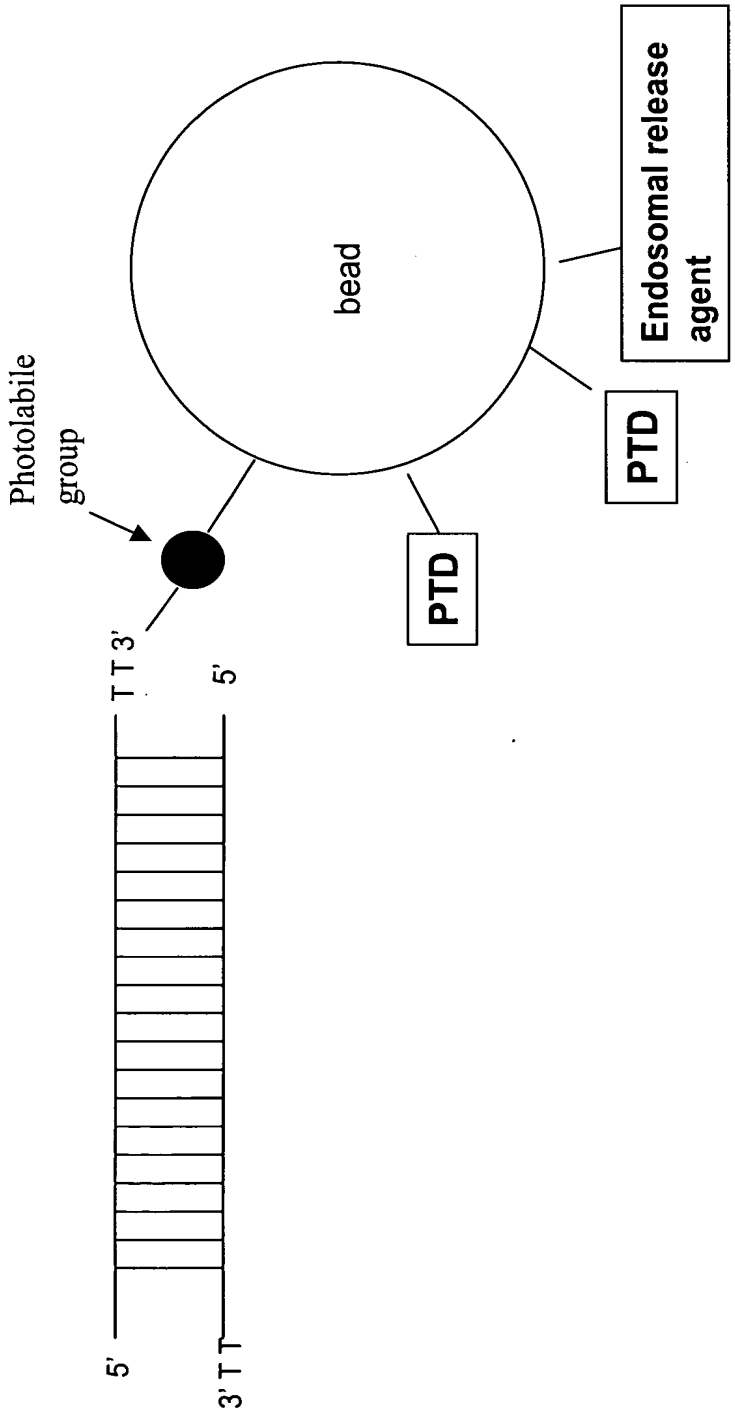

bead
Endosomal release agent
PTD
PTD
Photolabile group
T T 3'
5'
5'
3' T T

Fig. 9

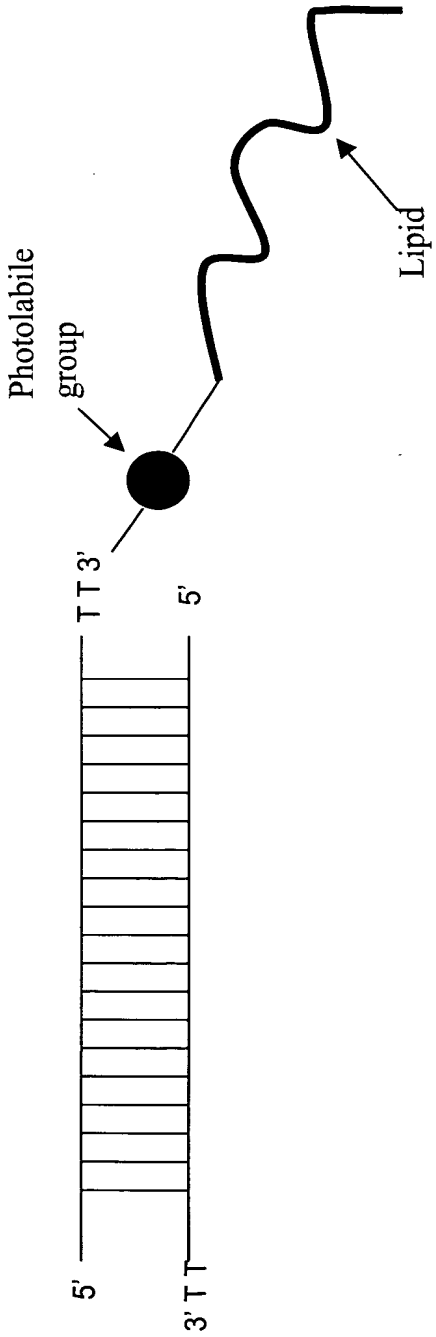


Fig. 10

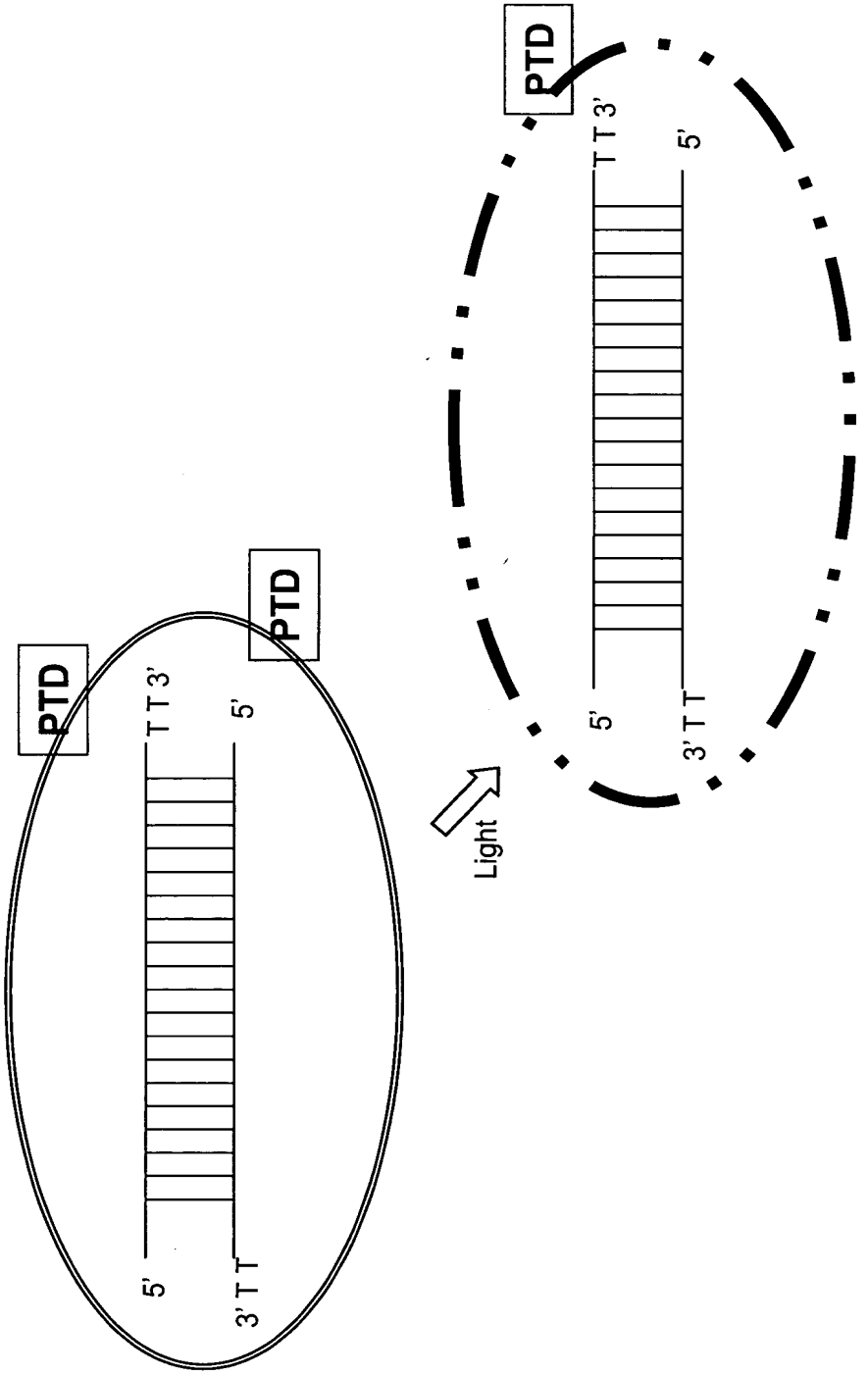


Fig. 11

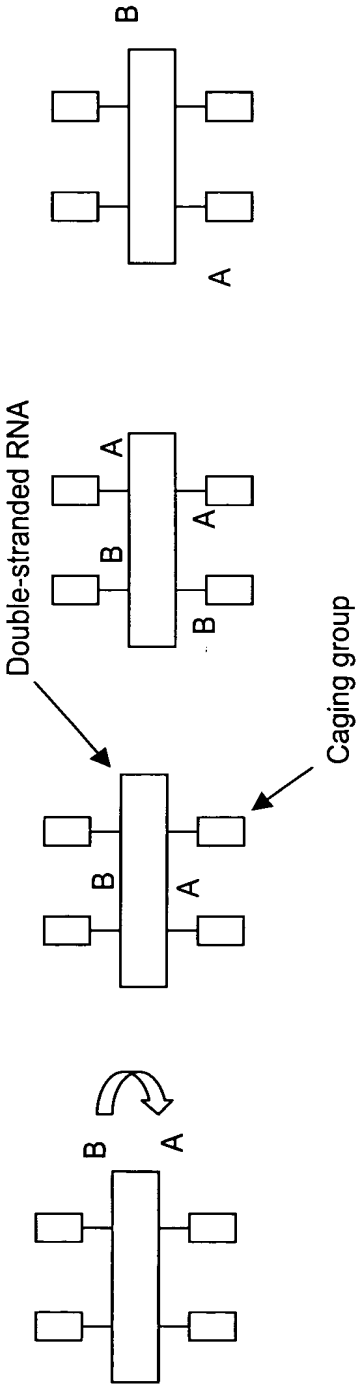


Fig. 12

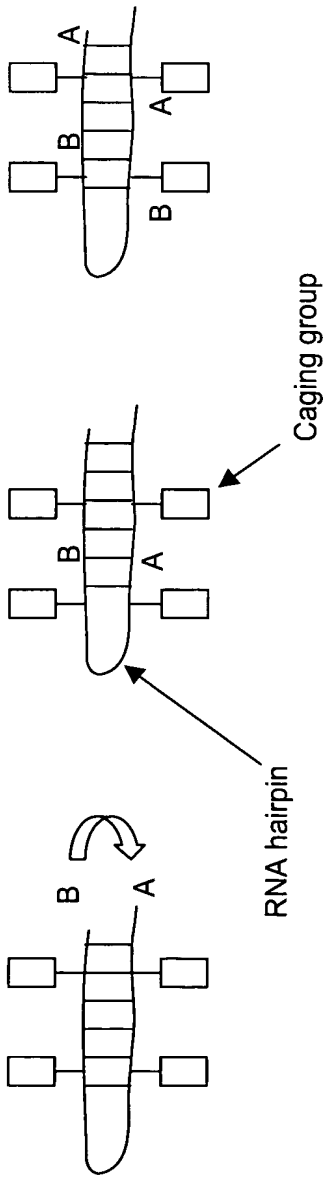


Fig. 13

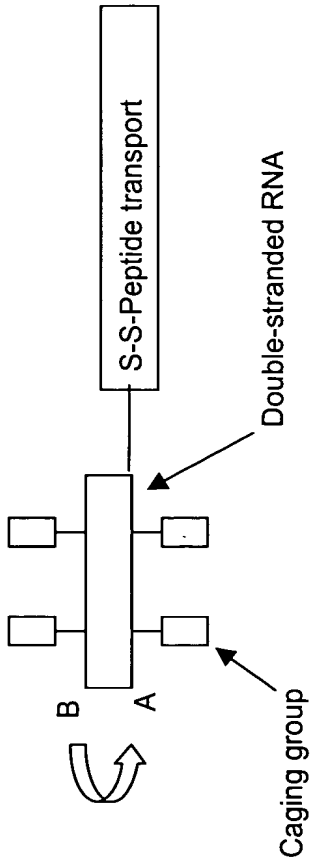


Fig. 14

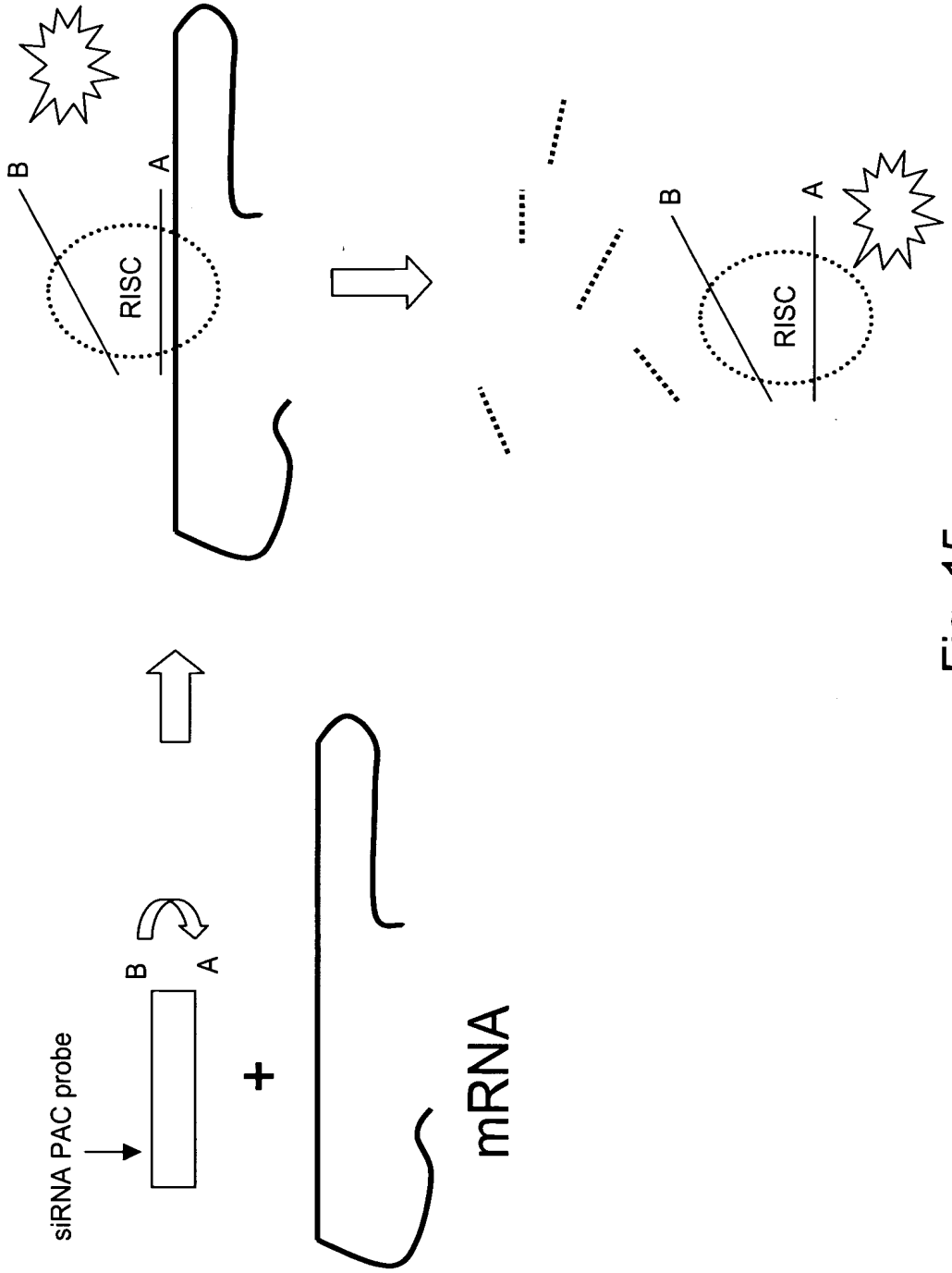


Fig. 15

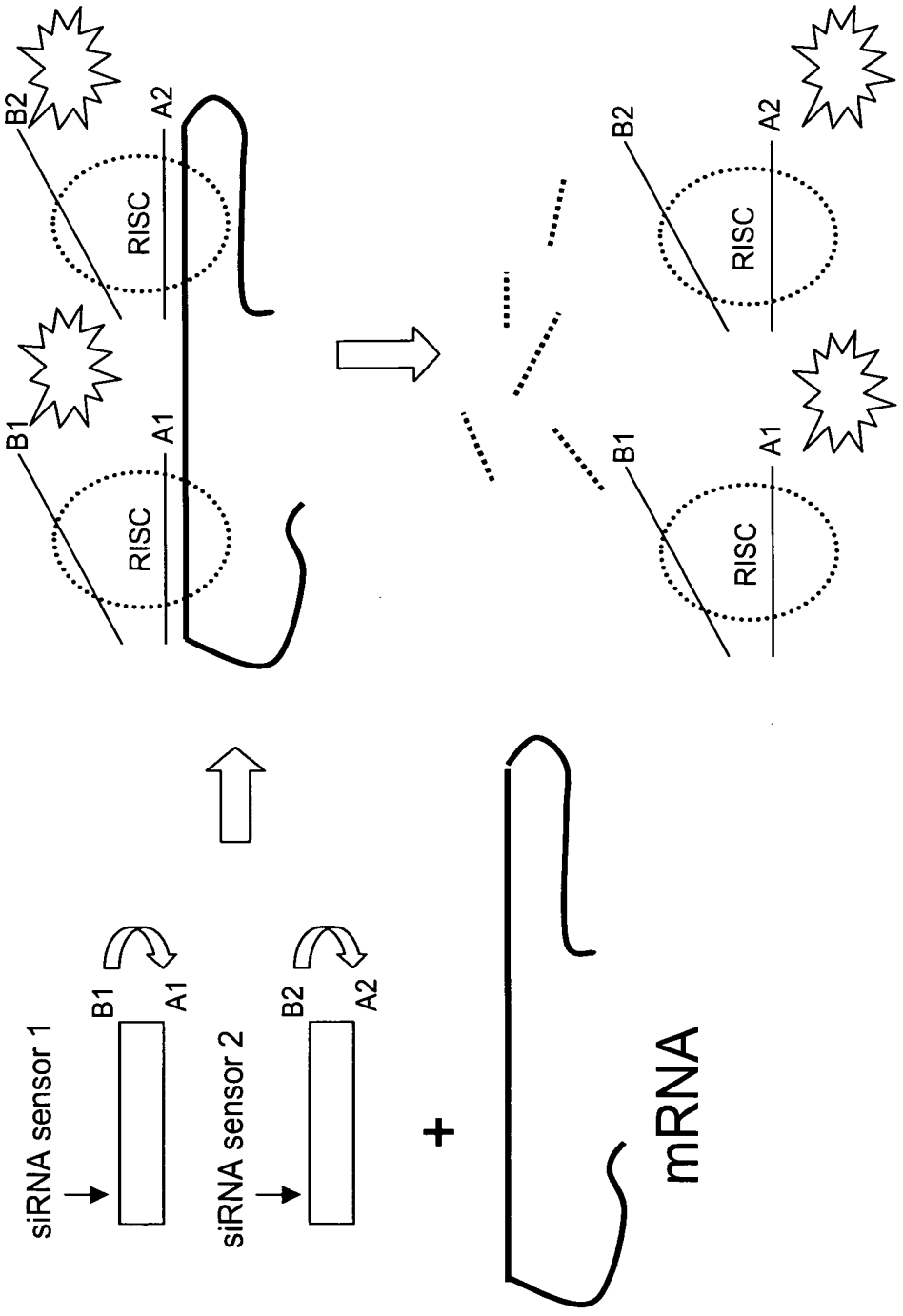

B2
A2
RISC
B1
A1
RISC
siRNA sensor 1
B1
A1
siRNA sensor 2
B2
A2
+
mRNA

Fig. 16

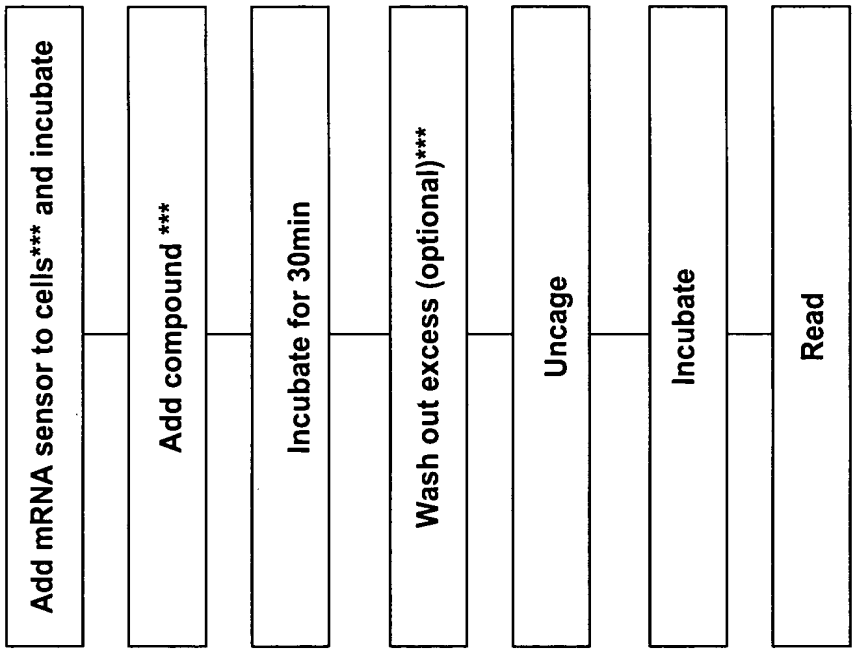

Add mRNA sensor to cells*** and incubate
Add compound ***
Incubate for 30min
Wash out excess (optional)***
Uncage
Incubate
Read
*** = fluid handling used

Fig. 17

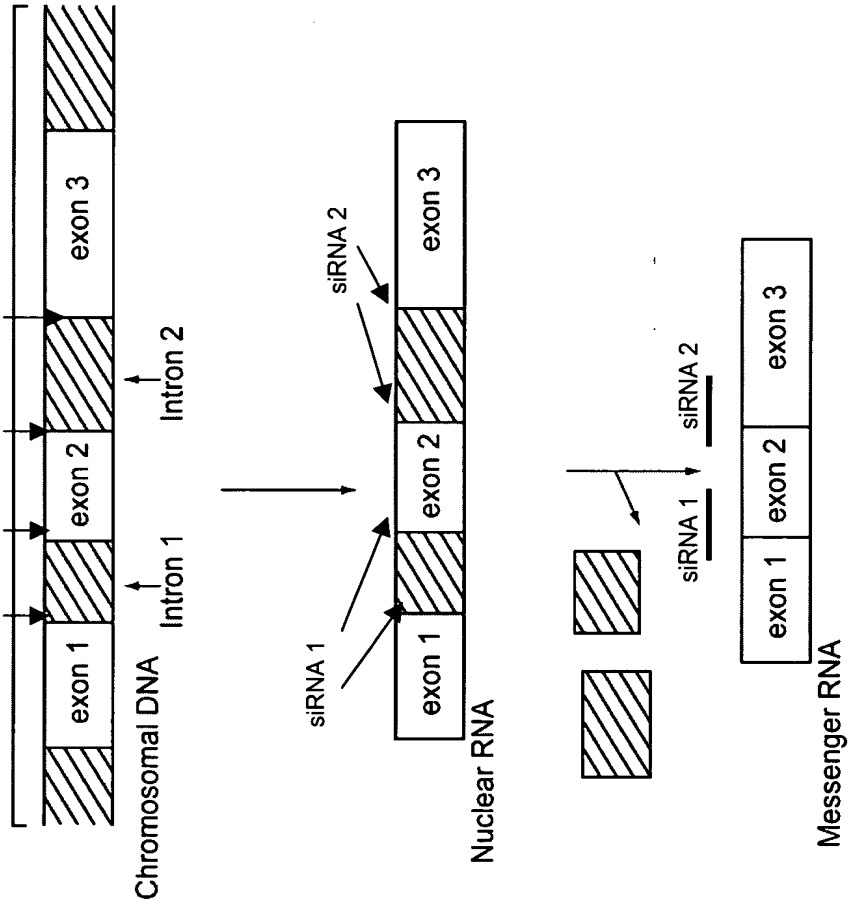

exon 1
exon 2
exon 3
Intron 1
Intron 2
Chromosomal DNA
siRNA 1
siRNA 2
Nuclear RNA
Messenger RNA

Fig. 18

ctctctgctcctcctgttcgacagtcagccgcatcttcttttgcgtcgccagccgagccacatcgctcagacaccatggggaaggtgaaggtcgg
agtcaacggatttggtcgtattgggcgcctggtcaccagggctgcttttaactctggtaaagtggatattgttgccatcaatgacccccttcattgac
ctcaactacatggtttacatgttccaatatgattccacccatggcaaattccatggcaccgtcaaggctgagaacgggaagcttgtcatcaatgga
aatcccatcaccatcttccaggagcgagatccctccaaaatcaagtggggcgatgctggcgctgagtacgtcgtggagtccactggcgtcttca
ccaccatggagaaggctggggctcatttgcaggggggagccaaaagggtcatcatctctgccccctctgctgatgcccccatgttcgtcatgg
gtgtgaaccatgagaagtatgacaacagcctcaagatcatcagcaatgcctcctgcaccaccaactgcttagcacccctggccaaggtcatcca
tgacaactttggtatcgtggaaggactcatg**RNAi3ACCACAGTCCATGCCATCACTRNAi3**gccacccagaagactgtggatgg
cccctccgggaaactgtggcgtgatggccgcggggctctccagaa**RNAi1CATCATCCCTGCCTCTACTRNAi1**ggcgctgccaa
ggctgtgggcaaggtcatccctgagctgaacgggaagctcactggcatggccttccgtgtccccactgccaacgtgtcagtggtggacctgac
ctgccgtctagaaaaacctgccaaatatgatgacatcaagaaggtggtgaagcaggcgtcggagggccccctcaagggcatcctgggctaca
ctgagcaccag**RNAi2GTGGTCTCCTCTGACTTCAACRNAi2**agcgacacccactcctccacctttgacgctggggctggcattgc
cctcaacgaccactttgtcaagctcatttcctggtatgacaacgaatttggctacagcaacagggtggtggacctcatggcccacatggcctcca
aggagtaagacccctggaccaccagccccagcaagagcacaagaggaagagagagaccctcactgctggggagtccctgccacactcagt
cccccaccacactgaatctcccctcctcacagttgccatgtagacccctgaagaggggagggcctagggagccgcaccttgtcatgtaccat
caataaagtaccctgtgctcaacc

Fig. 19

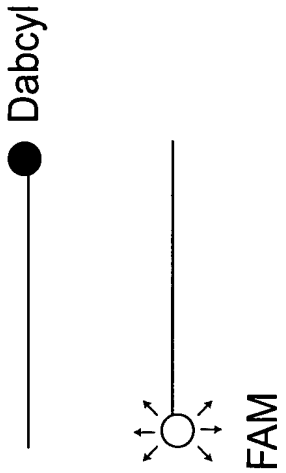


Fig. 20B

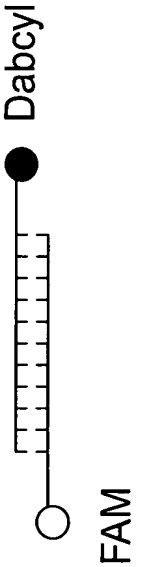


Fig. 20A

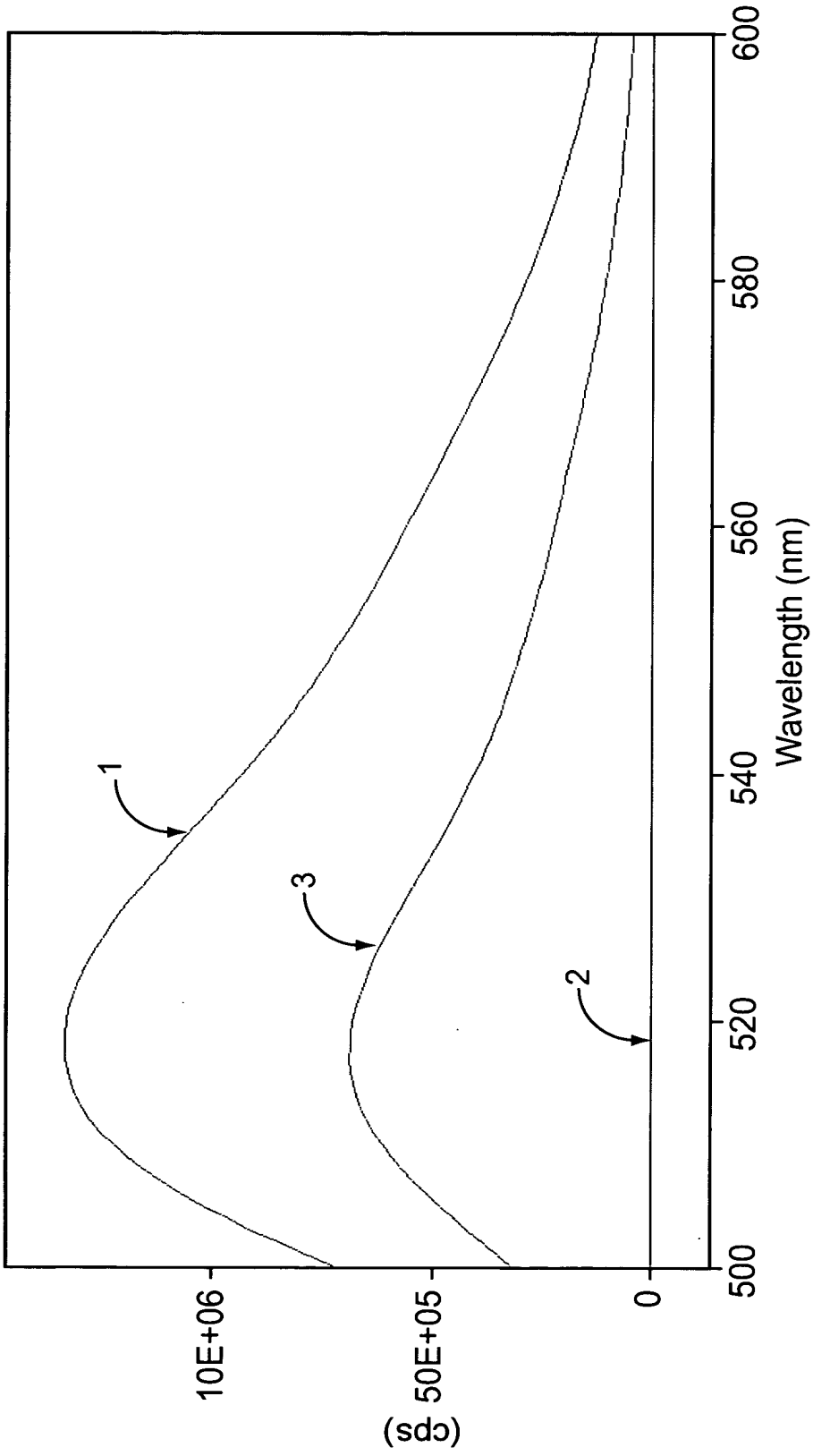


Fig. 20C

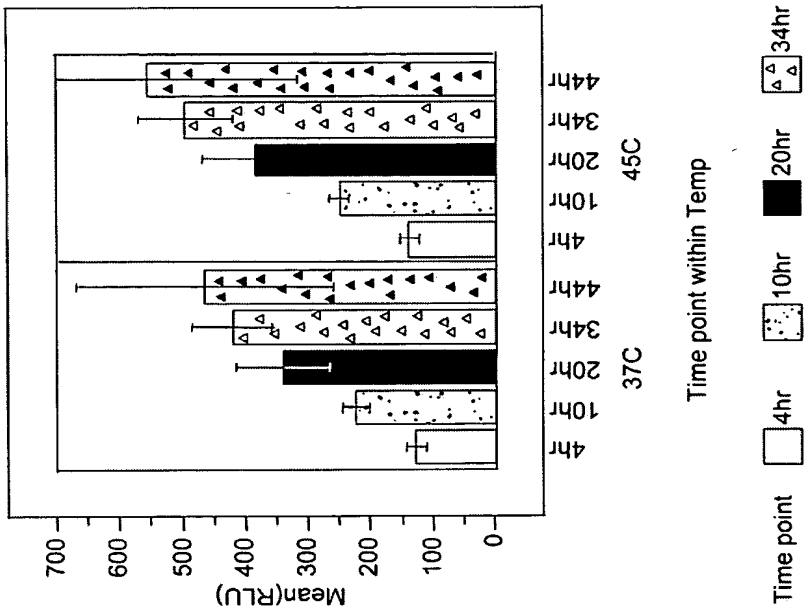


Fig. 21B

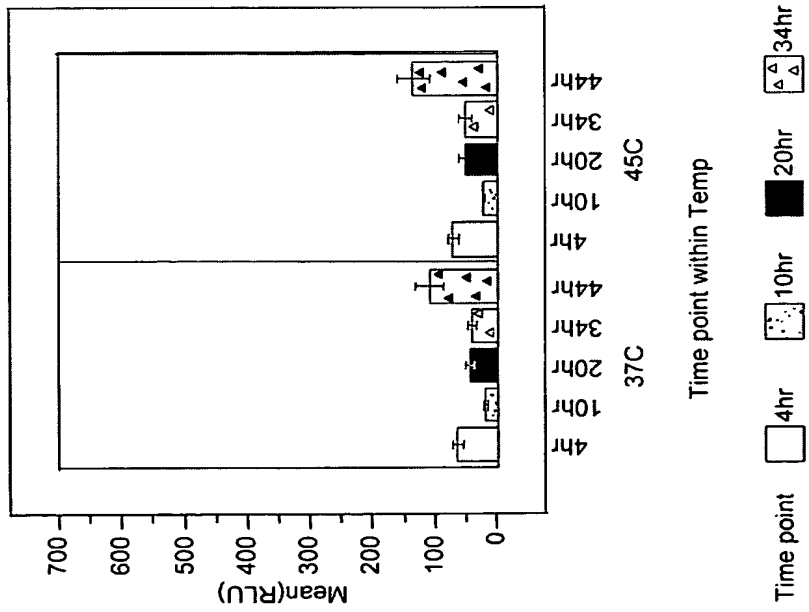


Fig. 21A

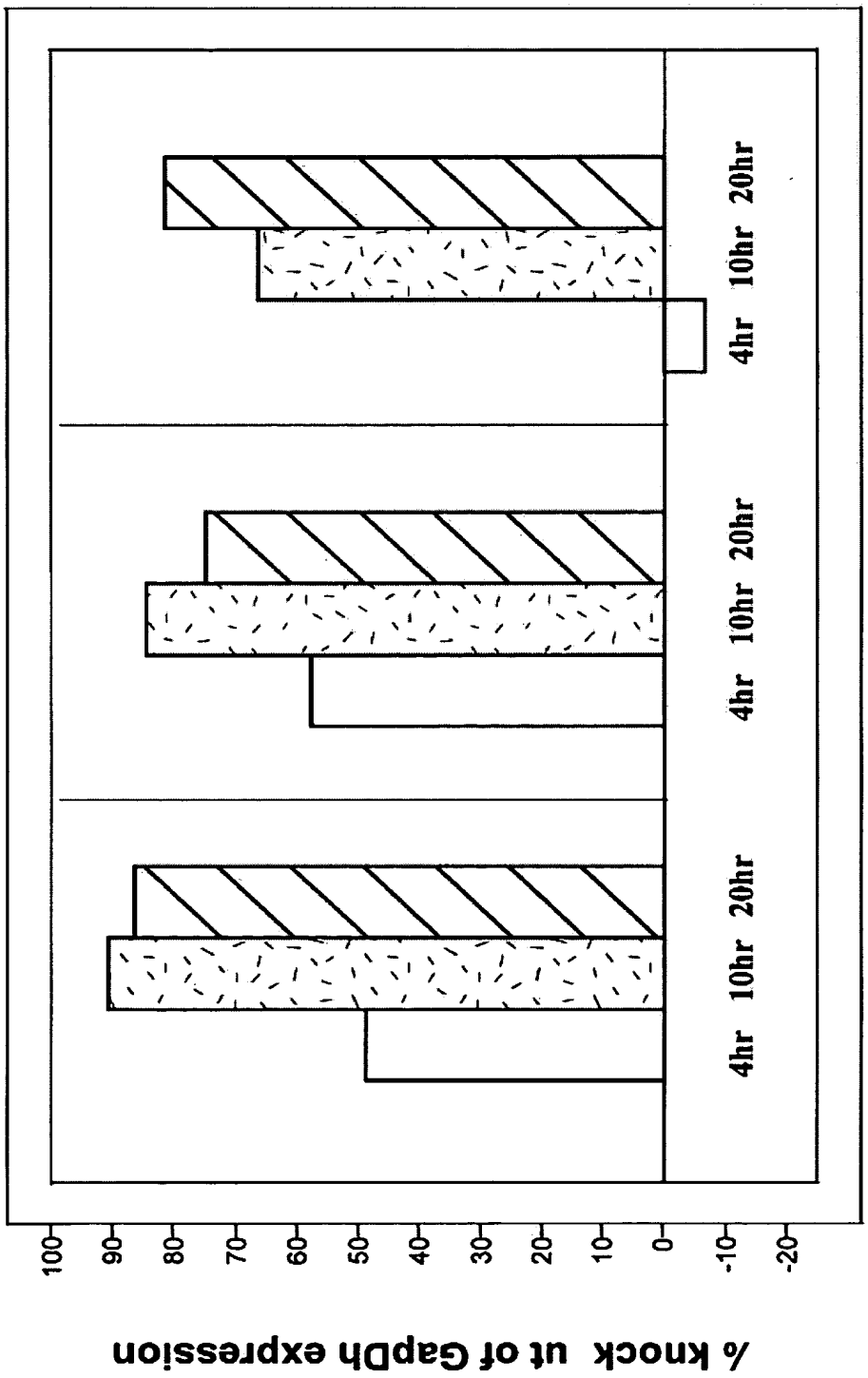

% knock ut of GapDh expression
100
90
80
70
60
50
40
30
20
10
0
-10
-20
4hr 10hr 20hr
4hr 10hr 20hr
4hr 10hr 20hr
RNAi1
RNAi2
RNAi3

Fig. 22

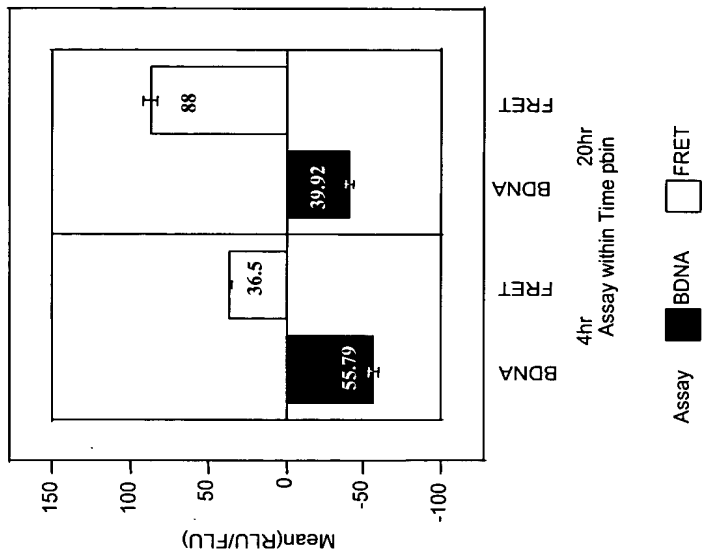


Fig. 23C

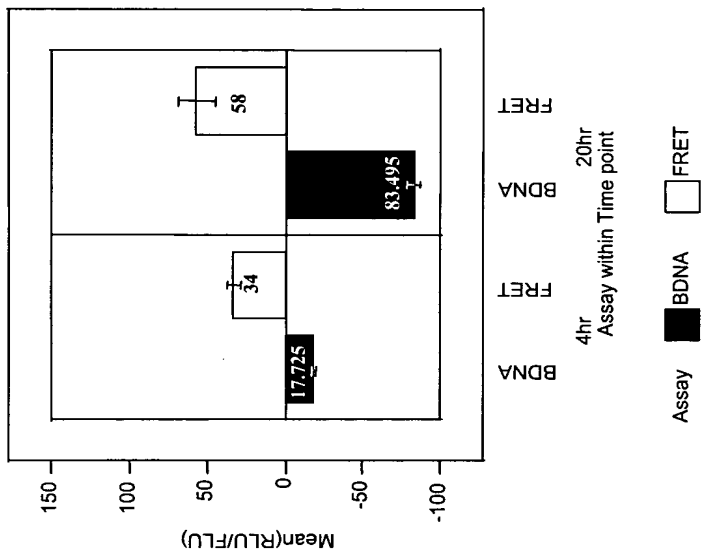


Fig. 23B

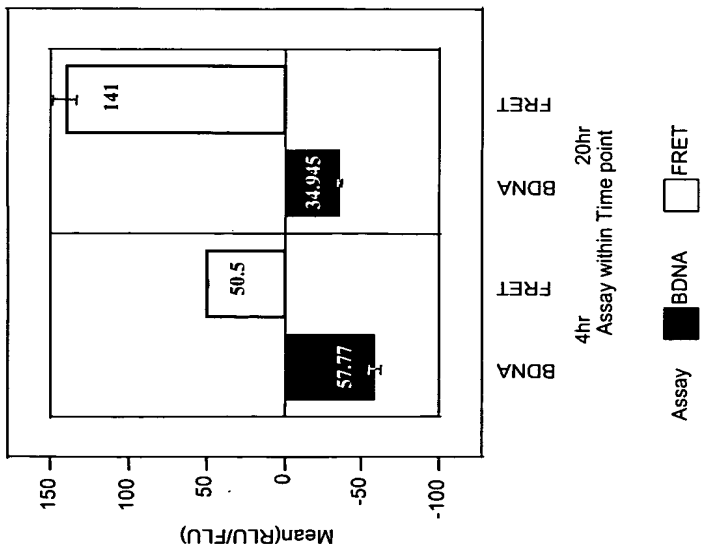


Fig. 23A

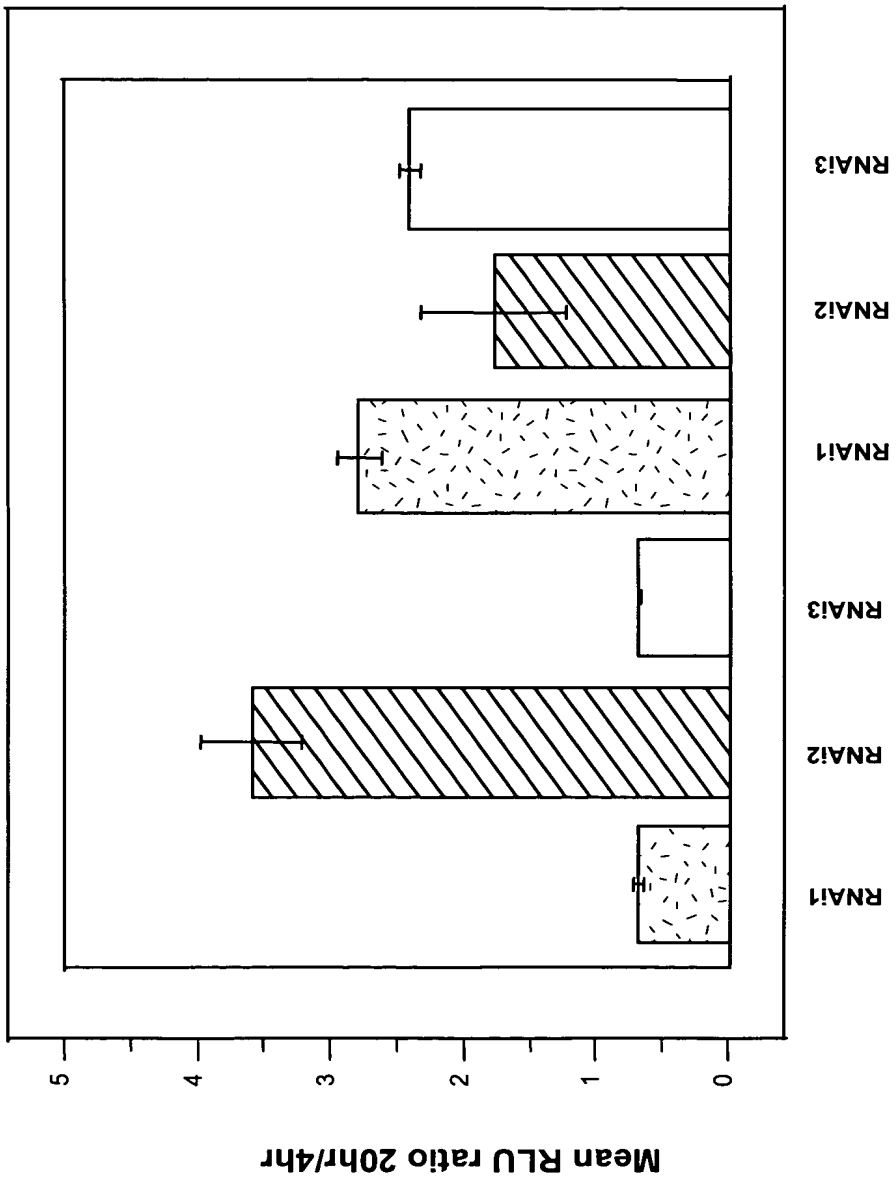

Mean RLU ratio 20hr/4hr
0
1
2
3
4
5
RNAi1
RNAi2
RNAi3
RNAi1
RNAi2
RNAi3
bDNA
20hr/4hr
FITC signal:
20hr/4hr

Fig. 24

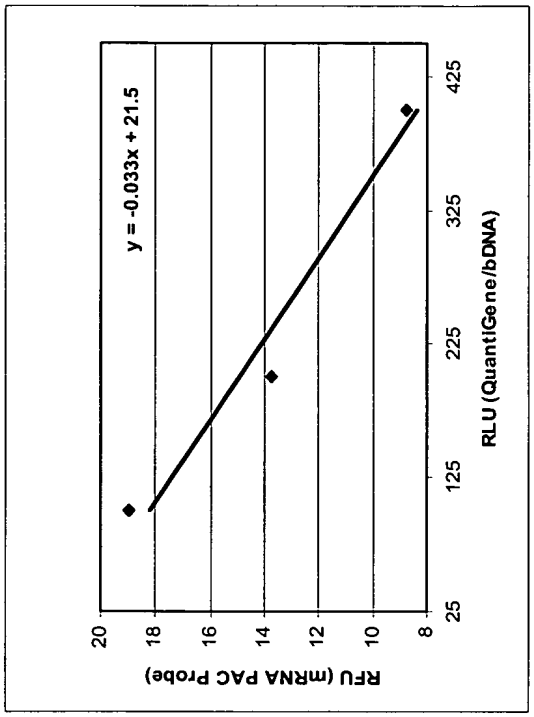


Fig. 25B

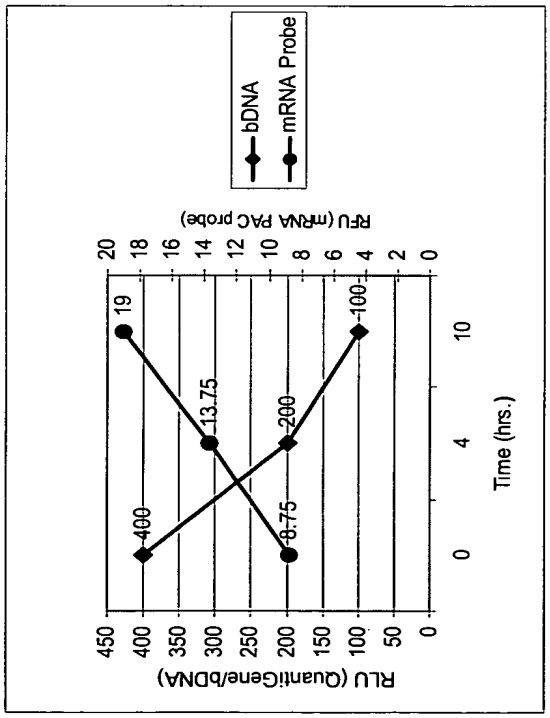


Fig. 25A

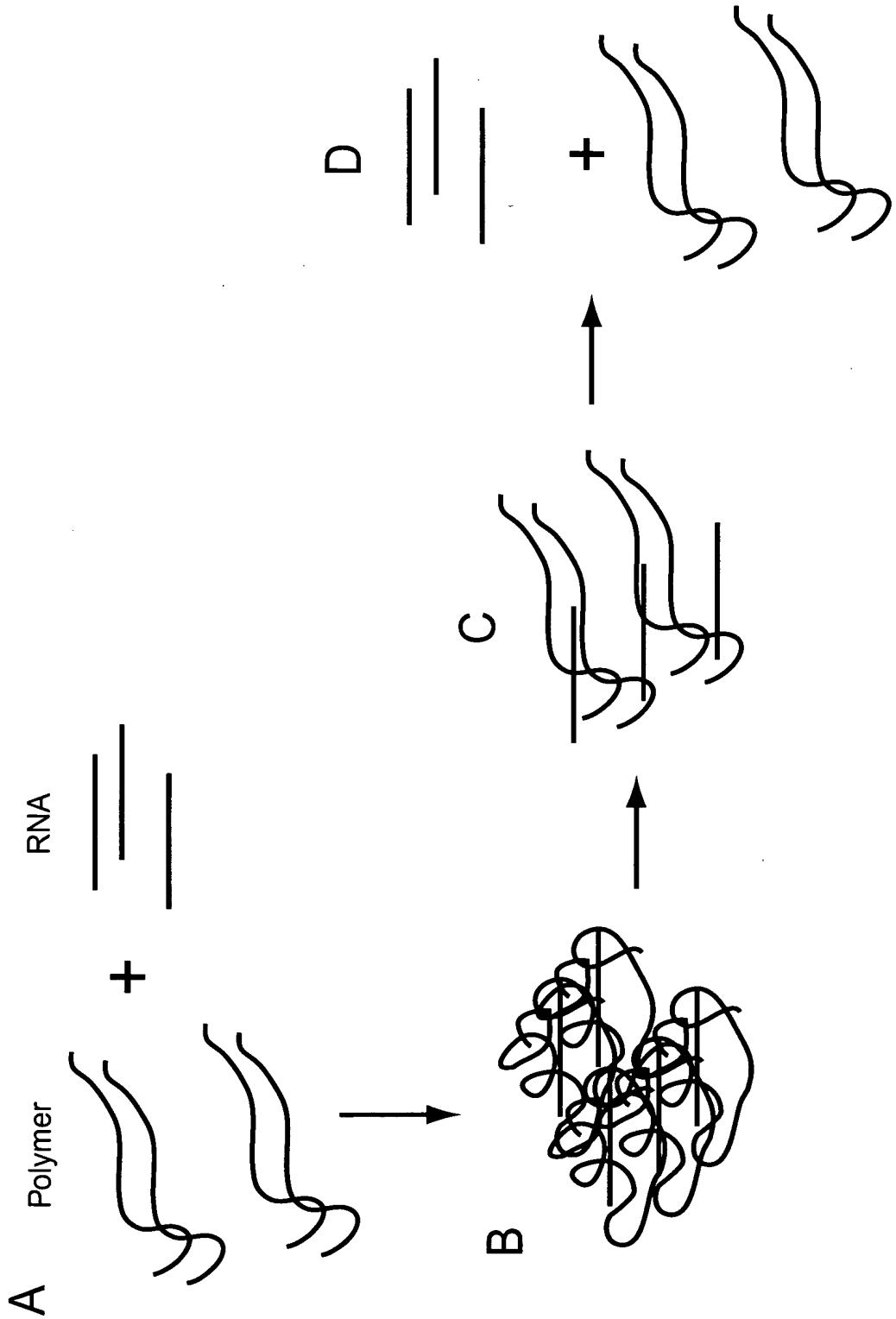


Fig. 26

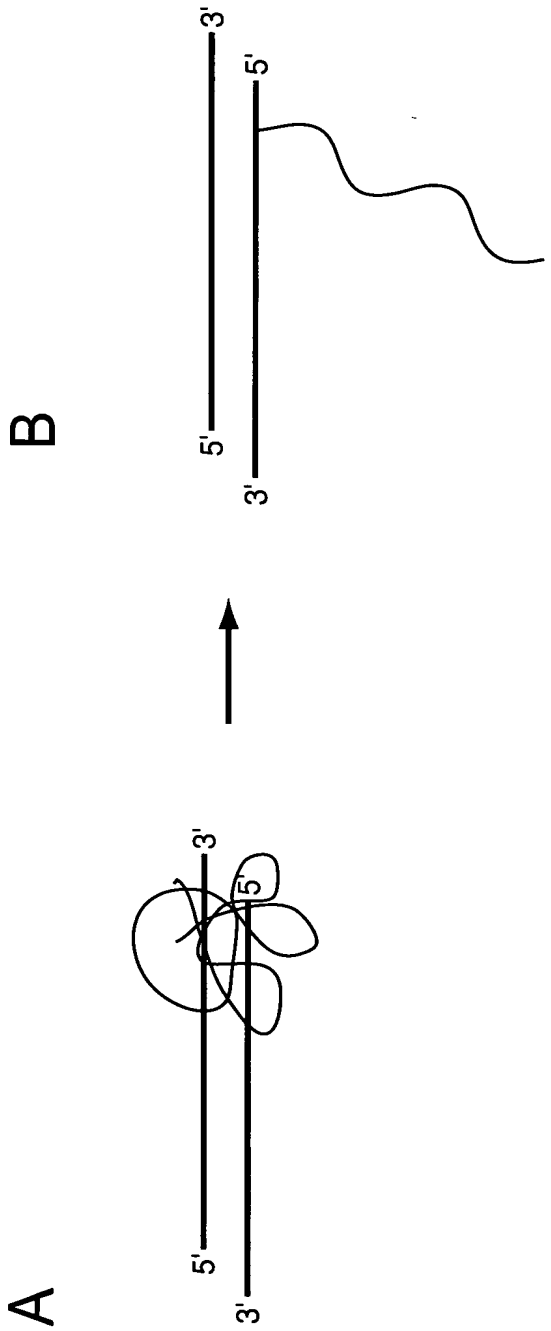
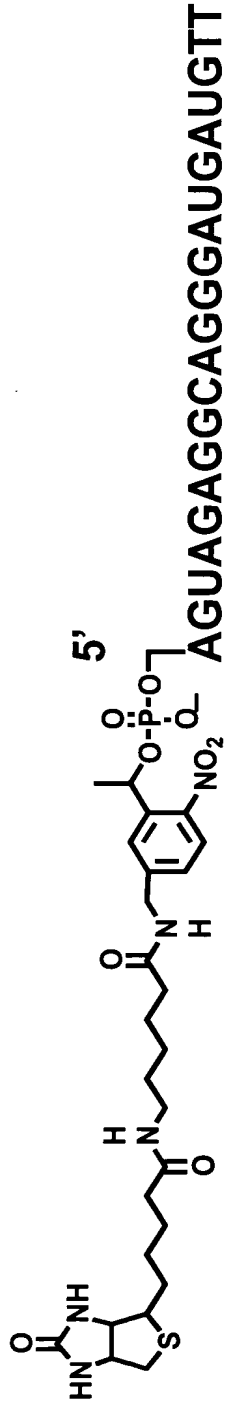


Fig. 27

Fig. 28A

5' - P – Photolabile Group-Biotin

Fig. 28B



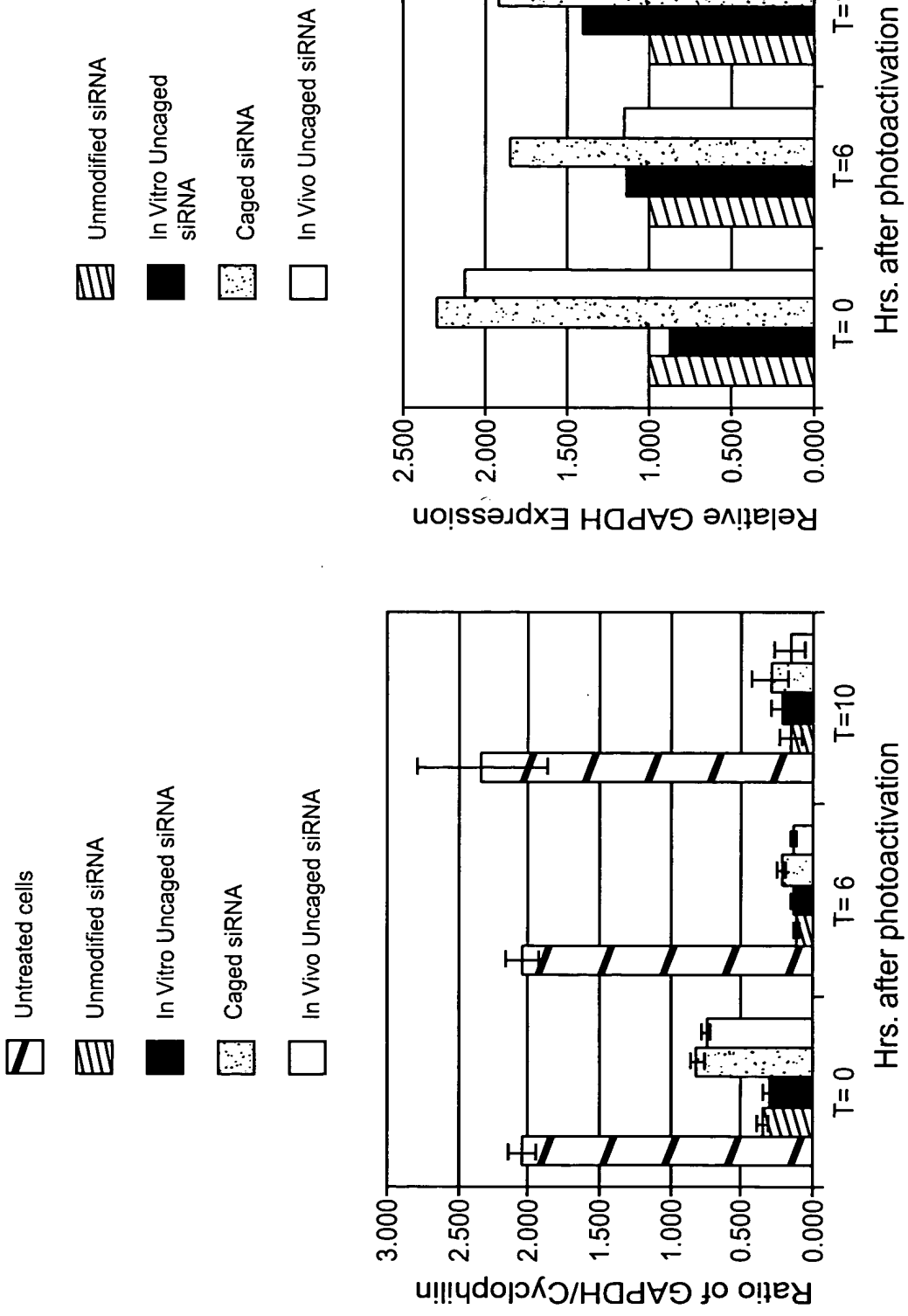


Fig. 29A

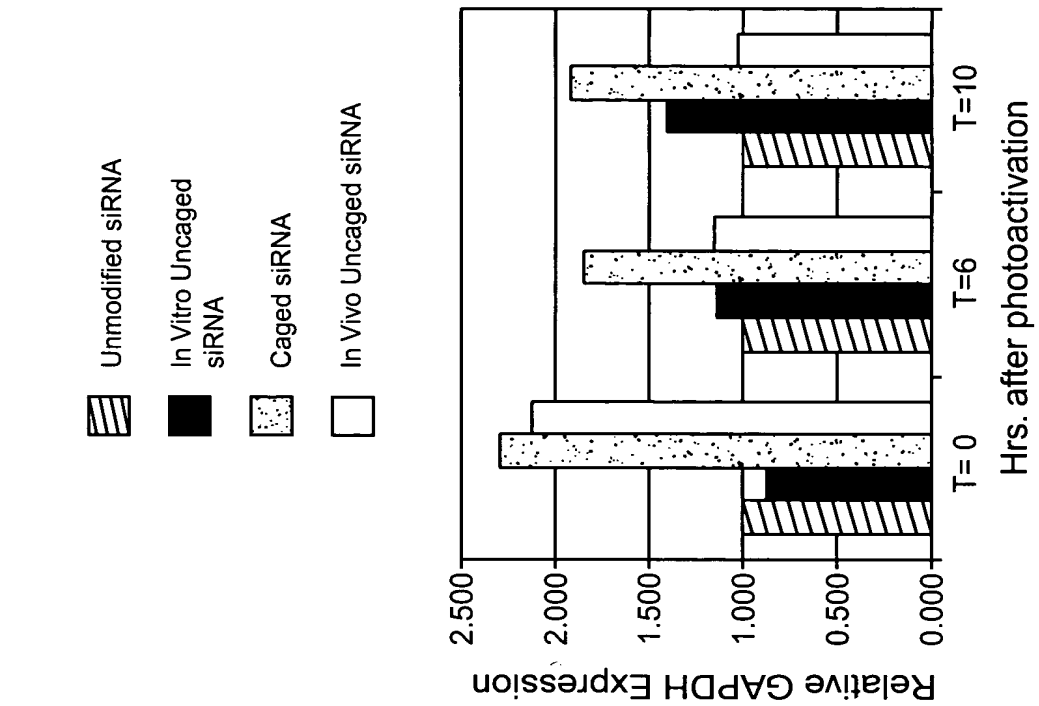


Fig. 29B

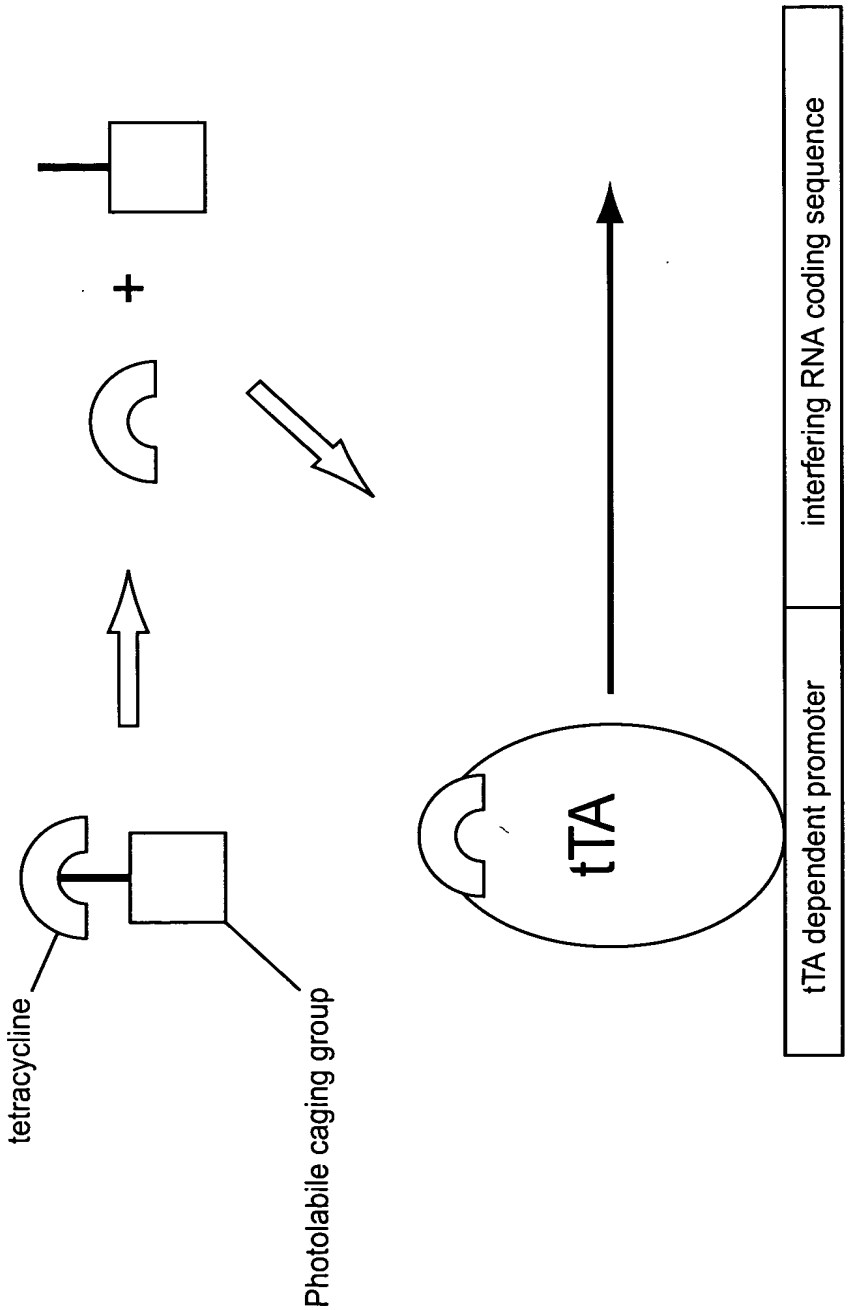

tetracycline
Photolabile caging group
+
tTA
tTA dependent promoter
interfering RNA coding sequence

Fig. 30

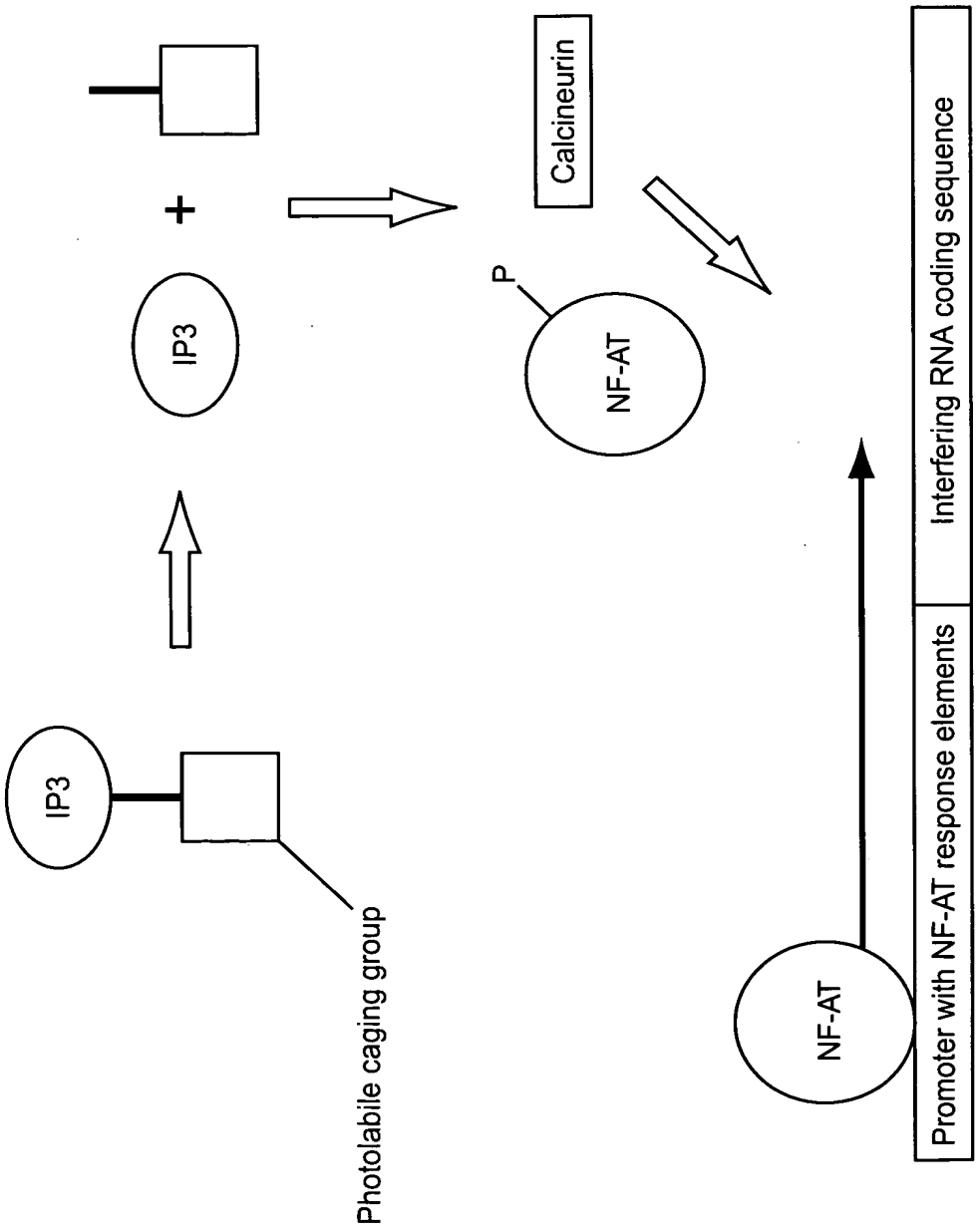

IP3
Photolabile caging group
+
IP3
Calcineurin
P
NF-AT
NF-AT
Promoter with NF-AT response elements
Interfering RNA coding sequence

Fig. 31